

AMENDMENTS TO THE CLAIMS**WHAT IS CLAIMED IS: (clean copy)**

1. (Original) A method for connecting link aggregation compatible devices
5 over a communication network comprising:
 (a) receiving a request to establish a connection between said devices, said
 connection being defined by specific traffic parameters;
 (b) detecting a plurality of maximally disjoint paths between said devices, said
 maximally disjoint paths being formed by compatible physical links; and
10 (c) establishing said connection over two or more logical links along a
 respective two or more maximum disjoint paths and aggregating said
 logical links into a virtual path having said specific traffic parameters.
2. (Original) A method as claimed in claim 1, wherein said specific traffic
15 parameters include the bandwidth of said connection.
3. (Original) A method as claimed in claim 1, wherein a maximum disjoint
path comprises one or more successive physical links connecting a port of a first
device with a corresponding port of a second device and all the nodes of said network,
20 said physical links being selected based on their physical characteristics.
4. (Original) A method as claimed in claim 3, wherein a corresponding port is
a port having similar specific traffic parameters.
- 25 5. (Original) A method as claimed in claim 4, wherein one of said specific
traffic parameters is the port rate.
6. (Original) A method as claimed in claim 2, wherein the sum of the
bandwidth of all logical links provides the bandwidth of said connection.
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7. (Original) A method as claimed in claim 1, wherein (c) comprises:
 selecting a group of one or more logical links for supporting said connection;
 trying to aggregate said logical links of said group into said virtual path;

in case of failure, ending said link aggregation; and
in case of success, establishing each said logical links of said group by
allocating an input and an output port on each network node along each
said maximally disjoint paths, aggregating said logical links into said
5 virtual path, and exchanging traffic between said devices along said virtual
path.

8. (Original) A method as claimed in claim 1, further comprising:
monitoring each said logical links of said virtual path for failure; and
10 in the case of a failed physical link on any logical link:
detecting a fault indication at the two end nodes of said failed physical link;
and
signaling said fault indication to a first and a second edge nodes connecting
said devices over said network.

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9. (Original) A method as claimed in claim 1, wherein said communication
network is an Ethernet network.

10. (Original) A method as claimed in claim 1, wherein said network is a
20 metropolitan area network (MAN).

11. (Canceled)

12. (Canceled)

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13. (Canceled)

14. (Currently amended) A switching node of a communication network for
routing traffic between near end and far end data terminals, comprising:
30 a plurality of input ports and output ports, each port having specified traffic
parameters;
a link aggregation interface for assigning an input port and a corresponding
output port to a physical route between said near end and said far end data
terminals under supervision of a node controller; and

a switch for routing traffic between said input port and said corresponding output port according to a connectivity map and establishing communication between said near end and said far end data terminals along a logical link, further comprising means for failure detection, wherein said
5 means for failure detection monitors said input port and generates a fault indication whenever said physical route is interrupted upstream from said switching node.

15. (Original) A switching node as claimed in claim 14, further comprising
10 means for failure communication, for propagating said fault indication towards edge nodes connecting said data terminals over the network.

16. (Original) A switching node as claimed in claim 14, wherein said fault indication is caused by a failed physical link.

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17. (Original) A switching node as claimed in claim 14, wherein said fault indication is caused by a dead node.

18. (Original) A system for connecting link aggregation compatible devices
20 over a communication network comprising:

means for receiving a request to establish a connection between said devices,
said connection being defined by specific traffic parameters;
means for detecting a plurality of maximally disjoint paths between said
devices, said maximally disjoint paths being formed by compatible physical
25 links; and
means for establishing said connection over two or more logical links along a
respective two or more maximum disjoint paths and aggregating said
logical links into a virtual path having said specific traffic parameters.

30 19. (Original) A system as claimed in claim 18, wherein said specific traffic parameters include the bandwidth of said connection.

20. (Original) A system as claimed in claim 18, wherein a maximum disjoint path comprises one or more successive physical links connecting a port of a first

device with a corresponding port of a second device and all the nodes of said network, said physical links being selected based on their physical characteristics.

21. (Original) A system as claimed in claim 20, wherein a corresponding port
5 is a port having similar specific traffic parameters.

22. (Original) A system as claimed in claim 21, wherein one of said specific traffic parameters is the port rate.

10 23. (Original) A system as claimed in claim 19, wherein the sum of the bandwidth of all logical links provides the bandwidth of said connection.

24. (Original) A system as claimed in claim 18, wherein said means for establishing connection further comprises:

15 means for selecting a group of one or more logical links for supporting said connection;
means for trying to aggregate said logical links of said group into said virtual path; and
means for ending said link aggregation in the case of an unsuccessful
20 aggregation.

25. (Original) A system as claimed in claim 18, wherein said means for establishing connection further comprises:

25 means for selecting a group of one or more logical links for supporting said connection;
means for trying to aggregate said logical links of said group into said virtual path; and
means for establishing each said logical links of said group by allocating an input and an output port on each network node along each said maximally
30 disjoint paths, aggregating said logical links into said virtual path, and exchanging traffic between said devices along said virtual path for a successful aggregation.

26. (Original) A system as claimed in claim 18, further comprising:

means for monitoring each said logical links of said virtual path for failure;
means for detecting a fault indication at the two end nodes of said failed
physical link in the case of a failed physical link on any logical link; and
means for signaling said fault indication to edge nodes connecting said devices
5 over said network.

27. (Original) A system as claimed in claim 18, wherein said communication
network is an Ethernet network.

10 28. (Original) A system as claimed in claim 18, wherein said network is a
metropolitan area network (MAN).